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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER	
AHMED, SHEEBA	
ART UNIT	PAPER NUMBER
1794	
MAIL DATE	DELIVERY MODE
05/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,946	PRESTON ET AL.	
	Examiner	Art Unit	
	SHEEBA AHMED	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-69 and 71-74* is/are pending in the application.

4a) Of the above claim(s) *16-56* is/are withdrawn from consideration.

5)☒ Claim(s) *57-69 and 71-74* is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Amendments to claim 57 have been entered in the above-identified application. Claim 70 is canceled. Claims 1-74 are pending of which claims 16-56 are withdrawn from consideration. **Claims 1-15, 57-69, and 71-74 are under consideration**.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 5,653,795 A).

Brown et al. disclose a method for forming fillers for cellulosic products, and products made using the fillers. The method for producing fillers comprises first providing an ionically dispersed aqueous slurry comprising from about 1 percent to about 30 percent solid mineral particles by weight. The mineral particles are selected from the group consisting of calcium carbonate, calcium hydroxide, magnesium carbonate, magnesium hydroxide, aluminum hydroxide, calcium sulfate and mixtures thereof. Best results are achieved when using mineral suspensions comprising ground natural calcium carbonate or synthetically precipitated calcium carbonate or mixtures

thereof. Ground natural calcium carbonate and synthetically precipitated calcium carbonate are typically derived from chalk, limestone or marble. The mineral particles typically are prismatic, rhombohedral, clustered prismatic or scalenohedral particles, but may be of a variety of morphological forms. Typically the mineral particles are in a mixture that includes "coarse particles" (particles having an equivalent spherical diameter of at least about 0.5 microns) and "fine particles" (particles having an equivalent spherical diameter of less than about 0.5 microns). Of the fine particles in such mixtures, typically some are "ultra-fine particles" (particles having an equivalent spherical diameter of less than about 0.2 microns). The mixtures are formed to contain particles that are sufficiently small in size to be useful as fillers or pigments for making paper and paper board. Due to the methods by which they are formed, it is typical for such mixtures to contain least 30 percent by weight of mineral particles having an equivalent spherical diameter of less than about 2 microns, and generally about 60 percent by weight of the mineral particles have an equivalent spherical diameter of less than about 2 microns. If the mineral particles are anionically dispersed, the anionic dispersant generally is selected from homopolymers or copolymers made from the group consisting of carboxylic acid containing vinyl monomers, sulfonic acid containing vinyl monomers, and mixtures thereof. More specifically, the anionic dispersing agent may be selected from the group consisting of polyacrylic acid homopolymers, polyacrylic acid copolymers, methacrylic acid homopolymers and copolymers, and mixtures thereof, with polyacrylic acid being a currently preferred

anionic dispersing agent. Cationic polymeric dispersing agents generally are selected from the group consisting of poly-(alkyl diallyl) quaternary ammonium salts; quaternary ammonium cationic polymers obtained by copolymerizing aliphatic secondary amines with epichlorohydrin; poly (quaternary ammonium) polyether salts that contain quaternary nitrogen in a polymeric backbone chain extended by ether groups; polyamines; copolymers of acrylamide with cationic vinyl monomers; dimethyldiallylammonium chloride; low-molecular-weight polyethyleneimine polyelectrolytes; and mixtures thereof. A currently preferred cationic dispersing agent is dimethylamine epichlorohydrin copolymer. The low-molecular-weight selective aggregating agent can be selected from the group consisting of poly-(alkyl diallyl) quaternary ammonium salts; quaternary ammonium cationic polymers obtained by copolymerizing aliphatic secondary amines with epichlorohydrin; poly (quaternary ammonium) polyether salts that contain quaternary nitrogen in a polymeric backbone chain extended by ether groups; polyamines; copolymers of acrylamide with cationic vinyl monomers; dimethylamine epichlorohydrin copolymers; dimethyldiallylammonium chloride homopolymer; dimethyldiallylammonium chloride copolymer; divalent metal ion salts; trivalent metal ion salts; polyethyleneimine polyelectrolytes; polyacrylic acid homopolymer; polyacrylic acid water-soluble salts; carboxyl containing polymers derived from methacrylic acid, iraconic acid and crotonic acid; and mixtures thereof. Currently preferred low-molecular-weight selective aggregating agents include dimethyldiallylammonium chloride homopolymer as a cationic aggregating agent and polyacrylic acid homopolymer as an anionic aggregating agent. The amount of the

selective aggregating agent added to the ionically dispersed suspension may vary, and is best determined by considering the characteristics desired in the suspension and the cost of the aggregating agent. However, byway of example, the selective aggregating agent may be added to the slurry of ionically dispersed mineral particles in an amount of from about 5 lbs to about 50 lbs per ton of mineral particles, preferably from about 5 lbs to about 25 lbs per ton. A working embodiment of the method for producing fillers comprises first providing an ionically dispersed aqueous slurry comprising from about 1 weight percent to about 15 weight percent ground natural calcium carbonate or synthetically precipitated calcium carbonate. The slurry can be purchased as a dispersed slurry, or the method may include the step of adding a dispersing agent to the mineral suspension to provide a slurry. Best results are achieved when the aqueous slurry is anionically dispersed and comprises from about 1 percent to about 10 percent ground natural calcium carbonate or synthetically precipitated calcium carbonate (See entire document; specifically col.1, lines 5-7, col. 2, lines 53-67, col. 3, lines 1-20, col. 3, lines 30-52, col. 4, lines 12-31, col. 4, lines 46-54, and col. 4, lines 61-67).

Brown et al. do not state that the "anionic dispersant present in an amount sufficient to overdisperse the at least one calcium carbonate" as in claim 1 or that the "pigment composition has a solids concentration ranging from 40% to 65% solids" as in claim 57.

However, it would have been obvious to one having ordinary skill in the art to optimize the concentration of the calcium carbonate in the pigment composition given

that the rheology of the pigment concentration can be controlled by varying the amount of the dispersants and the ease of coating the pigment composition is dependent on the rheology of the composition.

Response to Arguments

3. Applicant's arguments filed on January 28, 2009 have been fully considered but they are not persuasive. Applicants traverse the rejection of claims 1-15 under 35 U.S.C. 103(a) as being unpatentable over Brown (US 5,653,795 A) and submit that Brown fails to disclose all of the subject matter recited in independent claim 1, and further, that the rejection statement has failed to articulate in a legally sufficient manner why the differences between Brown and independent claim 1 would have been purportedly obvious to one of ordinary skill in the art. Applicants state that exemplary embodiments disclosed in the present application teach that use of an anionic dispersing agent in an amount large enough to overdisperse the calcium carbonate beyond the point of minimal viscosity surprisingly leads to improved printing properties on paper, which has been coated with such a composition and point to the examples such as Example 3, which the Applicants state shows that there is a clear improvement in print quality when a paper coating is prepared using an overdispersed calcium carbonate slurry. Applicants further state that an anionic polymer was added in an amount more than four times larger than needed for minimum rheology and that the analysis of the pigment coatings shows that this exemplary technique of overdispersing improved both the high print density and visual print quality.

However, the Examiner disagrees. First, as stated previously, the concentration of the calcium carbonate in the pigment composition is a result effective variable and the rheology of the pigment concentration can be controlled by varying the amount of the dispersants and the ease of coating the pigment composition is dependent on the rheology of the composition. Second, as pointed out by the Applicants, claims 1-15 are not commensurate is scope with the showing of unexpected results. The table on page 24 shows that the print quality for the samples having 2.5% maleic acrylic copolymer was visually assessed as good whereas the samples having only 0.5% maleic acrylic copolymer were assessed as having slight bleeding or moderate to bad bleeding. The results provided in the table are for a sodium salt of an acrylic/maleic acid copolymer having a 2:1 molar acrylic/maleic acid ratio and average molecular mass of 4000 and do not extend to all anionic dispersants. Furthermore, the table shows that there was slight bleeding when 3% maleic acrylic copolymer was used thus showing that the improvement in print quality was in a small range and does not extend over all over-dispersed samples. In addition, Applicants state that over-dosing is determined with respect to the optimal dose for minimum rheology which leads to the question of how one determines the optimal dose for minimum rheology.

Hence, the rejection of claims 1-15 is maintained.

Allowable Subject Matter

4. Claims 57-69 and 71-74 are allowed.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEEBA AHMED whose telephone number is (571)272-1504. The examiner can normally be reached on Monday-Friday from 8am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheeba Ahmed/
Primary Examiner, Art Unit 1794